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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,186	11/05/2001	Yasushi Kohno	TKA0032	5700

7590 06/01/2007
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EXAMINER

VALENTI, ANDREA M

ART UNIT	PAPER NUMBER
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3643

MAIL DATE	DELIVERY MODE
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06/01/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/007,186

Applicant(s)

KOHNO, YASUSHI

Examiner

Andrea M. Valenti

Art Unit

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 5 objected to because of the following informalities:

Claim 5, section b), line 2, "plane" should be --plant--

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Influence of temperature prior to see ripening and at germination on rosette formation and bolting of Eustoma grandiflorum*, abstract, Scientia Horticulturae, Volume 53, Issue 3, February 1993, Pages 225-230, K. Ohkawa et al, 7 pages in view of An Evaluation of the Potential of Low Temperature Pre-sowing Treatments of Tomato Seeds as a Means of Improving Germination Performance, Ann. Appl. Biol. (1987), 110, pg. 185-195 by Coolbear et al and U.S. Patent No. 5,294,593 to Khan.

Regarding Claims 1, 4 and 5, Ohkawa teaches a method of preventing rosette formation of plant seed which tend to suffer from rosette formation during growth by low temperature seed treatments of hydrated seeds at 3-5C for 5 weeks (Ohkawa abstract; *Eustoma grandiflorum*) and inherently prevents defective germination i.e. Ohkawa teaches leaving a plant seed to stand in a highly watery condition at a low temperature for a period of time from several days to inhibit rosette formation in a temperature from

Art Unit: 3643

0-15C. Ohkawa is silent on teaching that the plant seed is undergoes drying after immersion in the water and that the immersion and drying are conducted in a dark place.

Coolbear teaches the seed treatment method steps of leaving the plant seed to stand in a highly watery condition at a low temperature in a dark place for a period of time i.e. allowing seeds to imbibe water at 10C in darkness and then drying the seeds (Coolbear Methods, first paragraph) and inherently relative humidity of 100% (Coolbear teaches the seeds are in a covered dish and are continuously kept moist thus the humidity is 100%, Methods line 2-4). Coolbear teaches these steps enhance germination rates and improve uniformity of germination (Coolbear Summary).

The process of exposing seeds to cold temperatures is known in the art as vernalization. By definition, vernalization is the process in which a seed is subjected to a period of cold, causing changes that allow germination to occur, a period of cold temperatures required by certain plants before they will produce flowers and mature. The method steps taught by Coolbear is equivalent to vernalization. Since the seeds are undergoing vernalization the methods prevent both defective germination and inherently prevent rosette formation to some extent.

It would have been obvious to one of ordinary skill in the art to modify the teachings of Ohkawa with the teachings of Coolbear at the time of the invention for the known advantage of preventing defective germination and for storage since it is general knowledge in the art that light and darkness have effects on germination. It would be

Art Unit: 3643

obvious to one of ordinary skill in the art that if a particular seed is a light germinator it is desirable to treat and store the seed in the dark to prevent premature germination.

Khan teaches that it is old and notoriously well-known to dry hydrated seeds in the dark to prevent a break in dormancy (Khan Col. 3 line 40-49). Khan is cited merely to teach the general knowledge of one of ordinary skill in the art that drying of a seed should take place in the dark to prevent a break in dormancy. It would have been obvious to one of ordinary skill in the art to modify the teachings of Ohkawa with the teachings of Khan at the time of the invention for preventing loss of dormancy for storing seeds for several months as taught by Khan (Khan Col. 3 line 50-52).

Response to Arguments

Applicant's arguments with respect to claims 1, 4, and 5 have been considered but are moot in view of the new ground(s) of rejection.

Coolbear is cited to teach the general knowledge of one of ordinary skill in the art that pre-sowing treatments effect germination. In fact, Coolbear explicitly states that "Low temperature pre-sowing treatment of tomato seeds substantially enhanced germination rates and was much more effective at improving uniformity of germination than equivalent osmotic treatments (Coolbear, Summary section, first sentence, page 185; and Introduction section, first sentence, page 185). The bottom line is it is general knowledge in the art that seed treatments including leaving plant seeds in a highly watery condition at a low temperature for several days in the dark and subsequent drying is old and notoriously well-known treatment believed to effect germination.

Art Unit: 3643

Khan was cited merely as a teachings of general knowledge of one of ordinary skill in the art to dry a seed in a dark place, since light and darkness effect germination. If it is desired to store the seed then it is desirable to dry the seed in a dark place so that it will not germinate.

Examiner maintains that applicant has not patentably distinguished over the teachings of the cited prior art of record and the old and notoriously well-known general knowledge of one of ordinary skill in the art. (Onkawa, pg 230, last sentence)

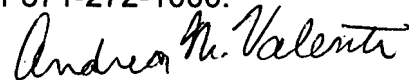
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrea M. Valenti whose telephone number is 571-272-6895. The examiner can normally be reached on 7:00am-5:30pm M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter M. Poon can be reached on 571-272-6891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3643

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Andrea M. Valenti
Primary Examiner
Art Unit 3643

24 May 2007